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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANDREJ KOCEV, SAMUEL H. DUNCAN, and STEVEN HO

Appeal 2010-004031¹
Application 09/944,776
Technology Center 2100

Before ROBERT E. NAPPI, JEAN R. HOMERE, and
ST. JOHN COURTENAY III, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL²

¹ Filed August 31, 2001. The real party in interest is Hewlett Packard Development Co. (App. Br. 2.)

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) (2002) from the Examiner's final rejection of claims 13-36, 40, and 41. Claims 1-12 have been cancelled. Claims 37-39 have been objected to as containing allowable subject matter. (App. Br. 2.) We have jurisdiction under 35 U.S.C. § 6(b) (2008).

We affirm.

Appellants' Invention

Appellants invented a method and system for allocating resources to accommodate input/output (I/O) transactions at I/O ports of a multiprocessor computer. In particular, upon determining the number of devices being serviced via the ports, criteria for transactions are set at the ports to thereby assign resources thereto. (Spec. 3, ll. 4-14.)

Illustrative Claim

Independent claim 13 further illustrates the invention. It reads as follows:

13. A method for programmably allocating resources to accommodate I/O transactions at I/O ports of a multiprocessor computer system comprising:

determining the number of devices being serviced via the ports,

identifying at least one assembly for hot swapping,

copying the contents of cache memories associated with the at least one identified assembly,

setting criteria for transactions at the port with respect to the number of devices, and

with respect to the numbers of devices at the ports, assigning resources to the ports.

Prior Art Relied Upon

The Examiner relies on the following prior art as evidence of unpatentability:

VanDoren	6,085,276	Jul. 4, 2000
VanDoren	6,085,294	Jul. 4, 2000
Westerinen	6,119,185	Sep. 12, 2000
Wallach	US 6,219,734 B1	Apr. 17, 2001
Wilson	US 6,718,413 B1	Apr. 6, 2004

Rejections on Appeal

The Examiner rejects the claims on appeal as follows:

1. Claims 13-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Westerinen, Wilson, and Wallach.
2. Claims 21-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Westerinen and Wilson.
3. Claims 26-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Westerinen, Wilson, and VanDoren94.

4. Claims 29 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Westerinen, Wilson, and VanDoren76.

5. Claims 31 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Westerinen, Wilson, and Wallach.

6. Claims 32, 33, 40, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Wallach and Westerinen.

7. Claims 34-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Wallach, Westerinen, and VanDoren76.

*Appellants' Contentions*³

Appellants contend that the combination of Westerinen, Wilson and Wallach does not teach, upon determining the number of devices being serviced via the I/O ports of a multiprocessor computer, setting criteria for transactions at the ports with respect to the number of devices being serviced at the ports to thereby assign resources to the ports, as recited in independent claim 13. (App Br. 7-11,-Reply Br. C1-c6.) According to Appellants, Westerinen teaches using historical configuration rules to tune PCs as

³ We have only considered those arguments that Appellants actually raised in the Briefs. Arguments Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

opposed to setting criteria for transactions at the port of those PCs. (App. Br. 8-9.) Further, Appellants argue that Westerinen teaches, at best, assigning resources to a device using rules that take into account the resources already in use by other active devices as opposed to an assignment that uses rules based on the number of devices being serviced. (Reply Br. C4.) Additionally, Appellants argue that neither Wilson nor Wallach cures the deficiencies of Westerinen. (Br. 11.)

Examiner's Findings and Conclusions

The Examiner finds that the proffered combination teaches or suggests the disputed limitations, as recited in independent claim 13, and therefore renders the claim unpatentable. (Ans. 4-5 and 16-20.) In particular, the Examiner finds that Westerinen discloses generating rules that define the configuration of a plurality of I/O adapters (e.g. ISA, EISA or PCI), wherein the rules are based on a number of devices currently plugged with the system to thereby avoid possible conflicts between the currently plugged devices and newly assigned devices to those same ports. (*Id.* 16-17.) The Examiner thus finds that Westerinen's disclosure of setting rules or criteria based on the number of devices currently assigned to the ports of a computer teaches the disputed limitations. (*Id.*)

II. ISSUE

Have Appellants shown that the Examiner erred in finding that the combination of Westerinen, Wilson and Wallach teaches, upon determining

the number of devices being serviced via the I/O ports of a multiprocessor computer, setting criteria for transactions at the ports with respect to the number of devices being serviced at the ports to thereby assign resources to the ports as recited in independent claim 13?

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Westerinen

1. Westerinen discloses a rule-based scheme for configuring a computer platform supporting various I/O ports to allocate available resources to devices at the ports that desire access to the resources. (Abst, col. 2, ll. 40-46.) In particular, Westerinen discloses gathering configuration knowledge from computer experts to generate rules for configuration that are grouped into executable tasks. (Col. 2, ll. 46-53.)

2. For each I/O port, Westerinen discloses using the generated rules to create a list of device types and associated resource types such that each resource is assigned to a particular device value. The generated rules are further used to detect possible conflicts by checking each setting value to determine whether it was already assigned to other active devices and whether it can be further shared. (Col. 7, ll. 21-27, col. 8, ll. 25-35.)

Wilson

3. Wilson discloses a method of reducing the number of interrupts upon completing an I/O command to transfer data between a host computer and an I/O device in operation. In particular, each time a command is completed, a host adapter monitors the number of devices that are contending for the SCSI bus. Upon detecting that two or more devices are contending for the bus, data is transferred to the host adapter by the selected device having the higher priority. (Col. 10, ll. 29-46.)

IV. ANALYSIS

Claims 13, 15, and 21

Independent claim 13 requires, *inter alia*, upon determining the number of devices being serviced via the I/O ports of a multiprocessor computer, setting criteria for transactions at the ports with respect to the number of devices being serviced at the ports to thereby assign resources to the ports.

As set forth in the Findings of Fact section, Westerinen discloses a scheme for creating a set of rules for assigning resources to devices at I/O ports of a computer. (FF. 1.) In particular, during the resource assignment, Westerinen discloses using the created rules to detect possible conflicts between devices already assigned to a value at a port and another device being assigned thereto. (FF. 2.) We find that by using the rules to detect conflicts between devices already assigned to a value and another device

being assigned thereto, Westerinen teaches setting criteria⁴ for detecting conflicts for transactions for a new device at the port with respect to other devices already connected to that same port. While the term “transaction” does not per se appear in Westerinen, as argued by Appellants (Reply Br. C2), we find that the assignment of a particular resource to the device is a transaction. Further, we find no error in the Examiner’s reliance on Wilson’s teaching to complement Westerinen since Wilson explicitly teaches determining the number of interrupt devices in a SCSI bus. (FF. 3.) Furthermore, we find that the Westerinen and Wilson disclose prior art elements that perform their ordinary functions to predictably result in a system that utilizes a set of rules to efficiently allocate resources to I/O devices at the ports of a computer system to thereby avoid unnecessary conflicts between any number of devices already connected to the ports and new devices being allocated to those same ports. Therefore, the combination is proper.

We note nonetheless that, notwithstanding Wilson’s teachings, one of ordinary skill in the art would have readily appreciated that Westerinen’s set of rules can be used in order to assign a device to a port and to detect conflicts thereto based on any number of devices already assigned to a particular value. Consequently, upon applying the created rules, Westerinen’s computer system can readily determine whether a device can

⁴ Setting criteria for something is defined as establishing a set of rules or principles for evaluating or testing something. Random House Webster’s College Dictionary, p. 322, 1995.

be assigned to the same value being occupied by any number of other devices previously assigned to a particular resource at the computer port. It therefore follows that Appellants have not shown that the Examiner erred in finding that the proffered combination teaches the disputed limitations recited in independent claim 13.

Regarding independent claims 15 and 21 Appellants reiterate the same arguments offered for the patentability of claim 13. We have already addressed these arguments in our discussion of claim 1 above, and found them unpersuasive. It follows that Appellants have not shown error in the Examiner's obviousness rejection of independent claims 15 and 21.

Claim 32

Regarding claim 32, Appellants argue that Westerinen discloses a programmable logic configured to assign devices to resources, which is not the same thing as assigning resources among I/O ports. (Br. 14.) In response, the Examiner finds that Westerinen teaches the cited limitation as a program logic that assigns the device to the first resource with the highest priority, and continues to loop through until all I/O port requesting devices are accounted for. (Ans. 20.) We agree with the Examiner, and adopt this finding as our own. Moreover, since in the Reply Brief Appellants have failed to address the cited finding made by the Examiner, we find that Appellants have therefore failed to show error in the Examiner's rejection of claim 32.

Claims 14, 16, and 31

Regarding claims 14, 16, and 31, Appellants argue that Wallach teaches that upon adding a new adapter to a computer system, a configuration manager configures the new adapter by adding certain information to its register. Appellants contend, however, that Wallach does not teach or suggest assigning control registers as resources to the I/O ports of a multiprocessor computer system. (Br. 15-16.) In response, the Examiner finds that Wallach's configuration manager allocates resources to the I/O adapter during the hot swap operation, and that such resources include the adapter's registers. (Ans. 18.) We agree with the Examiner's finding and adopt it as our own. We find that by writing information into the control registers during the hot swap, such registers are allocated as resources to the I/O adapters at such time. It follows that Appellants have not shown error in the Examiner's rejection of claims 14, 16 and 31.

Claims 17 and 19

Regarding claims 17 and 19, Appellants argue that Westerinen does not teach or suggest determining the number and types of transactions anticipated at the ports wherein the assignment of resources to ports is based on the numbers and transactions anticipated at the ports. (Br. 17.) In response, the Examiner finds that Westerinen's disclosure of selecting different types of resources such as IRQ, DMA for assignment to the I/O adapter teaches the disputed limitations. (Ans. 19.) We agree with the Examiner. As discussed above, Westerinen's disclosure teaches determining

the number of devices assigned at the port before assigning resources thereto as a way to avoid possible conflicts. Furthermore, as recognized by the Examiner, we find that the resources being assigned can be of various types. (FF. 2.) Therefore, one of ordinary skill in the art would have readily appreciated that Westerinen's assignment of resources constitutes a matching of different types of resources with an identified number of devices at the ports of the computer device. It follows that Appellants have not shown error in the Examiner's rejection of claims 17 and 19.

Claims 18-20, 22-30, 33-36, 40 and 41

Appellants have not argued or even attempted to traverse the rejection of claims 18-20, 22-30, 33-36, 40 and 41. Therefore, Appellants have waived such arguments.⁵

V. SUMMARY

Appellants have not established that the Examiner erred in rejecting claims 13-36, 40, and 41 under 35 U.S.C. § 103(a) as set forth above. We therefore affirm these rejections.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2009).

AFFIRMED

Vsh

⁵ See supra note 3.

Appeal 2010-004031
Application 09/944,776

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